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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,684	07/31/2001	Hung-Yi Lin	3313-0365P-SP	1165

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EXAMINER

HARPER, HOLLY R

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,684

Applicant(s)

LIN ET AL.

Examiner

Holly R. Harper

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-10 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-10 and 16-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

The Amendment, filed on 1/22/04, has been entered and acknowledged by the Examiner.

Claims 16-19 have been entered.

Claims 1 and 7 have been amended.

Claims 5, 6, 11, and 12 have been canceled.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peng (USPN 6582984) in view of Miyashita et al. (WO 98/24271).

In regard to claim 1, the Peng reference discloses a method of making an OLED display panel by forming a plurality of grooves on the substrate (Figure 3F, Element 300) parallel to a vertical direction, forming a plurality of first electrode lines (Figure 3F, Element 310) in the grooves, forming a cavity matrix on the first electrode (Figure 3F), filling an organic light-emitting layer (Figure 3F, Element 320) in the cavities and forming a plurality of second electrode lines (Element 330) on the substrate parallel to a horizontal direction.

The Peng reference fails to disclose the organic EL layer being formed by an ink-jet method. However, in the same field of endeavor, Miyashita discloses a method of producing organic EL elements and teaches that forming the EL layers with an ink-jet system makes possible to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency (Abstract). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Miyashita of forming the EL layers with an ink-jet method in order to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency.

Regarding claim 2, the Peng reference discloses the first electrode lines are made of ITO (Column 3, Lines 39-45) and the second electrode lines are made of a metal thin film (Column 4, Lines 12-17).

Regarding claim 3, the Peng reference discloses the grooves and cavity matrix are formed using a laser (Column 3, Lines 23-33).

Regarding claim 7, the Peng reference discloses a method of making an OLED display panel by forming a plurality of grooves on the substrate (Figure 3F, Element 300) parallel to a vertical direction, forming a plurality of first electrode lines (Figure 3F, Element 310) in the grooves, forming a cavity matrix on the first electrode (Figure 3F), filling an organic light-emitting layer (Figure 3F, Element 320) in the cavities, forming a plurality of second electrode lines (Element 330) on the substrate parallel to a horizontal direction, and forming red-green-blue three-color organic light emitting matrix (Column 3, Lines 55-65).

The Peng reference fails to disclose the organic EL layer being formed by an ink-jet method. However, in the same field of endeavor, Miyashita discloses a method of producing organic EL elements and teaches that forming the EL layers with an ink-jet system makes possible to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency (Abstract). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Miyashita of forming the EL layers with an ink-jet method in order to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency.

Regarding claim 8, the Peng reference discloses the first electrode lines are made of ITO (Column 3, Lines 39-45) and the second electrode lines are made of a metal thin film (Column 4, Lines 12-17).

Regarding claim 9, the Peng reference discloses the grooves and cavity matrix are formed using a laser (Column 3, Lines 23-33).

3. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peng (USPN 6582984) in view of Miyashita et al. (WO 98/24271) in further view of Hofmann et al. (USPN 6,422,906).

In regard to claims 4 and 10, the Peng reference discloses depositing an ITO film on the substrate so that the grooves are filled by the ITO film (Column 3, Lines 40-44). The Peng reference discloses that etching is used to remove the unwanted ITO on the substrate, but does not disclose polishing the substrate. The Hofmann reference teaches that a chemical mechanical

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polishing process is used as a preferable polishing technique. The chemical-mechanical polishing step is utilized to eliminate any significant deviations from planarity on the surface (Column 11, Lines 35-50). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate a chemical mechanical polishing process to the substrate to remove excess material, as taught by Hofmann, to create a smooth surface without unwanted material.

4. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peng (USPN 6582984) in view of Tanski et al. (USPN 5,445,711).

Regarding claim 16, the Peng reference discloses a method of making an OLED display panel by forming a plurality of grooves on the substrate (Figure 3F, Element 300) parallel to a vertical direction, forming a plurality of first electrode lines (Figure 3F, Element 310) in the grooves, forming a cavity matrix on the first electrode (Figure 3F), filling an organic light-emitting layer (Figure 3F, Element 320) in the cavities, forming a plurality of second electrode lines (Element 330) on the substrate parallel to a horizontal direction, and forming red-green-blue three-color organic light emitting matrix (Column 3, Lines 55-65).

The Peng reference fails to disclose the organic EL layer being formed by a thermal evaporation method. However, in the same field of endeavor, Tanski discloses a method of producing EL elements and teaches that layers can be formed by thermal evaporation to create layers of uniform composition (Column 5, Lines 11-15). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Tanski to form the organic EL layer by thermal evaporation to create a layer with uniform composition.

Regarding claim 17, the Peng reference discloses the first electrode lines are made of ITO (Column 3, Lines 39-45) and the second electrode lines are made of a metal thin film (Column 4, Lines 12-17).

Regarding claim 18, the Peng reference discloses the grooves and cavity matrix are formed using a laser (Column 3, Lines 23-33).

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peng (USPN 6582984) in view of Tanski et al. (USPN 5,445,711) in further view of Hofmann et al. (USPN 6,422,906).

In regard to claim 19, the Peng reference discloses depositing an ITO film on the substrate so that the grooves are filled by the ITO film (Column 3, Lines 40-44). The Peng reference discloses that etching is used to remove the unwanted ITO on the substrate, but does not disclose polishing the substrate. The Hofmann reference teaches that a chemical mechanical polishing process is used as a preferable polishing technique. The chemical-mechanical polishing step is utilized to eliminate any significant deviations from planarity on the surface (Column 11, Lines 35-50). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate a chemical mechanical polishing process to the substrate to remove excess material, as taught by Hofmann, to create a smooth surface without unwanted material.

Response to Arguments

6. Applicant's arguments with respect to claims 1-4, 6-10, and 16-19 have been considered but are moot in view of the new ground(s) of rejection.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Harper whose telephone number is (571) 272-2453. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Holly Harper
Patent Examiner
Art Unit 2879



**VIP PATEL
PRIMARY EXAMINER**